

REMARKS

The office action of June 16, 2008, has been carefully considered.

It is noted that claims 1, 3 and 6-8 are rejected under 35 U.S.C. 103(a) over EP 0781609 to Kramer in view of JP 05-161902 to Konose et al. and the patent to Langer et al.

Claims 5 and 9 are rejected under 35 U.S.C. 103(a) over Kramer, Konose et al. and Langer et al., and further in view of the patent to Ginzburg.

In view of the Examiner's rejections of the claims, applicant has amended claim 6.

It is respectfully submitted that the claims presently on file differ essentially and in an unobvious, highly advantageous manner from the constructions and methods disclosed in the references.

Turning now to the references and particularly to Kramer, it can be seen that this reference discloses a method and

installation for hot rolling bands.

The reference to Konose et al. discloses hot rolling equipment.

The patent to Langer et al. discloses a plant and process for hot-rolling strip or plate stock.

The Examiner combined these references in determining that claims 1, 3 and 6-8 would be unpatentable over such a combination. Applicant respectfully submits that none of these references, nor their combination, teach a rolling mill and method for hot rolling aluminum as in the presently claimed invention. The combination does not teach a rolling mill have all of the features now recited in the claims. Particularly, there is no teaching of the roughing tandem train and the finishing train being operated in a reversing mode, together with the other features in the claim. The references have been discussed at length in previous amendments and those comments are incorporated herein by reference. The following additional comments are provided.

Applicant maintains that would not be obvious from the teachings of Kramer, Konose and Langer to combine tandem

operations and reversible tandem stands in such a way as it is recited in claim 1 of the present application. Of course, it is known to operate with reversible tandem roughing stands or reversible tandem finishing stands or with a roughing stand and a reversible tandem finishing stand in tandem operation.

But, without knowledge of the present invention, a person skilled in the art will not find any teaching or suggestion within these three documents to combine them in the inventive way for achieving the object to create a rolling mill with a more compact type of construction, wherein the conveyance intervals between the individual processing stations (furnace region, roughing, finish rolling) are reduced.

Applicant submits that the argumentation of the Examiner is merely an ex post analysis combining a generic idea according to Kramer, which is to operate a roughing stand and a finishing stand in tandem operation, with a reversible roughing stand according to Konose (there is no evidence that this should be a tandem operated stand) and combining this with a tandem operated reversible finishing stand according to Langer (and hereby ignoring that Langer discloses a combination of a reversible tandem finishing stand with a non reversible roughing stand and not mentioning that Langer regards

the use of reversing stands arranged in direct succession involving disadvantages).

In response to the arguments presented by the Examiner it is once again pointed out that the term "at least one" stand according to Kramer only teaches that there might be more than one stand. But, this is no indication with regard to the question, whether the "more than one" stands will be operated in tandem operation and whether these stands will be reversibly operated and additionally whether all stands will simultaneously participate during tandem operation of the roughing and the finishing train. Therefore, it can not be taken from Kramer that this document discloses the use of tandem operated stands. Kramer is silent in respect to the distance between the respective "more than one" stands.

Furthermore, there is no indication that a person skilled in the art would replace the single roughing stand according to Langer with a reversing tandem operated roughing stand to combine it with the reversible tandem operated finishing stand according to Langer wherein further additionally the two tandem operated stands remain operable together in a tandem operation.

Kramer discloses a mill including at least one reversing roughing stand for breaking-down rolling, a strip and at least one finishing stand for reducing the broken-down strip into a finish strip. The finishing stand includes reeling furnaces and the distance between the at least one reversing roughing stand and the at least one finishing stand is such that tandem rolling in the roughing stand and the finishing stand may take place. But Kramer does not disclose a tandem operation of the roughing stand or of the finishing stand. Further, Kramer does not disclose reversible tandem finishing stands or reversible tandem roughing stands.

Additionally, from the term "at least one" it can not be concluded that a second respective stand would be arranged at a position which would allow using the two stands in tandem operation, especially in case that reversible operation should be done. There is neither a hint in the Kramer publication that two stands of either a roughing train or a finishing train should be used in tandem operation nor that they should be used in a reversible tandem operation. There is no indication that the distance between two roughing stands or two finishing stands should be other than such a distance that both respective stands are operable individually. The Kramer document refers only to the distance between a roughing

stand and a finishing stand but is quiet in respect to other distances, for instance in front of the at least one roughing stand.

Therefore, it is still the object of the present invention to create a rolling mill with a more compact type of construction for hot rolling metal wherein conveyance intervals between the individual processing stations (furnace region, roughing, finish rolling) are reduced.

This object is achieved by a rolling mill comprising the features of the claim 1, and by consistently and systematically using the concept of tandem rolling in all parts of the rolling mill. This main concept for arranging stands of a rolling mill, which is expressed by the features of the claim 1, can not be derived from the cited prior art.

Of course, there might be a disclosure of individual elements or parts of the present application given by the citations, but there is no indication or hint given to a person skilled in the art to combine these elements in such a consistent way as disclosed in the present invention. Only by the way of an ex post analysis starting from the present application it is possible to pick up several aspects disclosed by the cited prior art and combine them with the disclosure

of the Kramer. However, there is nothing that suggests to, nor is it obvious for, a person skilled in the art to make such a combination. If the combination is at all suggested it is only by the use of hindsight, which of course is impermissible.

Konose discloses a rolling mill comprising a reversible tandem stand and a finishing stand with a crop shear and a bar joining machine in-between. Konose discloses the use of a reversible tandem roughing stand but does not disclose a reversible tandem finishing stand nor a tandem operation of the tandem train and the finishing train with all stands of both trains working during this tandem operation.

Therefore, Konose may only contribute a single aspect, namely that the roughing stand might be operable in a tandem modus. But, it still remains the question, for what reasons a person skilled in the art looking for a more compact type of a rolling mill should exclusively consider the roughing stand according to Konose and to transfer only this roughing as a tandem stand to a rolling mill disclosed by Kramer. Doing so means first of all to disregard that Konose only discloses reversible stands, which are separated with a distance of within 6m, which alone gives no evidence, that the two reversing stands are operable in tandem operation. Konose only discloses to make the distance between mutual mills a specified

condition and that a slab is rolled with a first roughing mill and successively (not simultaneously) with a second roughing mill.

Furthermore, requires disregarding that Konose discloses reversible roughing mills which are in combination with a nonreversible finishing train and a non-tandem operation of the roughing and finishing stands part of a rolling mill. Therefore, why would a person skilled in the art disregard these facts, although Konose discloses such a combination of features to achieve an improved hot-rolling plant. However, even by exclusively transferring the roughing stand to a mill as disclosed by Kramer, such a combination only leads to a rolling mill additionally comprising a reversing roughing mill. The rolling mill obtained in this way still lacks of the features of a reversible tandem finishing stand and the reversing tandem roughing stand and the reversible tandem finishing stand being operable in tandem operation with all of its stands simultaneously working, as in the presently claimed invention.

Therefore, the combination of references teaches only some of the features of the present invention according to claim 1.

Yet at least the question remains, which reference would/could teach the use of the reversible tandem roughing stand and a reversible tandem finishing stand in a common tandem operation with all of its

stands working? Kramer discloses only the tandem operation of two single stands of the roughing train but leaves open and is silent about at which distance further stands are arranged and whether all these further stands will be operated in case that the at least one reversing stand and the at least one finishing stand are simultaneously working in tandem operation. Konose discloses the use of a tandem roughing stand but does not disclose a tandem operation of the roughing stand and the finishing stand.

Finally, Langer discloses a reversible tandem finishing stand which might be operated individually but also jointly together with a single roughing stand. Furthermore, the finishing train is a reversible one, whereas the roughing stand is not disclosed as being a reversible one. Quite contrary to this, it is regarded as a disadvantage to use reversing stands arranged in direct succession as can be seen from column 1, lines 44-49.

Therefore, the question comes up, whether a person skilled in the art would take the reversing tandem finishing stand according to Langer and combine it with a rolling mill only comprising the general idea extracted from Kramer to use at least one roughing stand and one finishing stand together in tandem operation, but provide it with a reversible tandem roughing stand according to Konose,

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although and regardless that Langer discloses only a non reversible one stand roughing train and although and regardless that Langer refers to disadvantages involving the use of reversing stands arranged in direct succession. Applicant submits that this clearly indicates that a person skilled in the art would not combine Langer with another prior art document for replacing the non reversible one stand roughing train with a reversible tandem stand.

In view of these considerations it is respectfully submitted that the rejection of claims 1, 3 and 6-8 under 35 U.S.C. 103(a) over a combination of the above-discussed references is overcome and should be withdrawn.

The patent to Ginzburg et al. has also been considered. Applicant submits that this reference adds nothing to the teachings of the previously discussed references so as to teach the present invention. Thus, it is respectfully submitted that the rejection of claims 5 and 9 under 35 U.S.C. 103(a) is overcome and should be withdrawn.

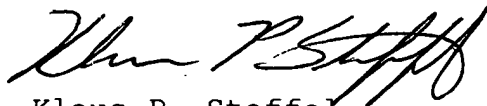
Reconsideration and allowance of the present application are respectfully requested.

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Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on November 17, 2008.

By:


Klaus P. Stoffel

Date: November 17, 2008